



The **Margin of Error**, ***E***, is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Margin of Error**, ***E***  *=*

For example, a confidence interval of 18cm < ******< 22cm, can also be expressed as 20cm + \_\_\_cm. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is \_\_\_cm.

Our estimate is “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”.

Given a particular level of confidence **, we can calculate how big a sample is necessary to estimate ** to give a required accuracy or margin of error, *E*.

**Example:** A survey is to be conducted to determine the mean income of a group of workers. A pilot survey gives ***σ*** ≈ $100. How large must the sample be if the mean income is to be estimated to within $20 using a 95% confidence interval?